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| 10/800,963      | 03/15/2004  | Alex Kuperman        | 44251A              | 1062             |

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THE DOW CHEMICAL COMPANY  
INTELLECTUAL PROPERTY SECTION  
P. O. BOX 1967  
MIDLAND, MI 48641-1967

EXAMINER

JOHNSON, EDWARD M

ART UNIT PAPER NUMBER

1754

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/800,963

Applicant(s)

KUPERMAN ET AL.

Examiner

Edward M. Johnson

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7,9,18 and 22-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,9,18 and 22-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

DETAILED ACTION

*Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 9, 18, 22-27, 29-33, and 35-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwakura et al. US 5,502,020.

Regarding claims 1, 33, and 35, Iwakura '020 discloses a process of making an oxidation catalyst comprising gold on a titania wherein the process comprises impregnation of a titania carrier (see column 2, lines 37-39 and column 3, lines 37-41) with gold (see abstract and column 3, lines 12-13), wherein the aqueous impregnation solution may have alcohol or, specifically, ethanol added (see column 6, lines 39-43, Table 2, and Example 21), either of which Applicant defines as a preferred reducing agent (see instant specification, page 8). Intended use recitations are not generally accorded undue patentable weight in process of making claims. However, Iwakura further discloses

Art Unit: 1754

that the oxidation may take place in the presence of air, which contains both hydrogen and oxygen (see column 9, lines 39-41).

Regarding claim 2, Iwakura '020 discloses chloroaurates of potassium and sodium (see paragraph bridging columns 4-5).

Regarding claim 3, Iwakura '020 discloses 10-10,000 ppm (see claim 2).

Regarding claims 4-7, and 9, Iwakura '020 discloses the aqueous impregnation solution may have alcohol or, specifically, ethanol (see column 6, lines 39-43, Table 2, and Example 21), either of which Applicant defines as a preferred reducing agent (see instant specification, page 8).

Regarding claim 18, Iwakura '020 discloses titania carrier (see column 2, lines 37-39 and column 3, lines 37-41).

Regarding claims 22-24, Iwakura '020 discloses 10-4000 ppm rare earth additive metals (see column 3, lines 9-12 and 31-33).

Regarding claim 25-26, Iwakura '020 discloses immersion in aqueous solution and washing by dipping and draining forming a wash coat (see column 6, lines 39-43 and claims 16-18).

Regarding claim 27, Iwakura '020 discloses cesium and alkaline earth metals (abstract), which Applicant specifies and promoter metals (instant specification, paragraph bridging pages 15-16).

Art Unit: 1754

Regarding claim 29, Iwakura '020 discloses room temperature impregnation.

Regarding claims 30-32, Iwakura '020 discloses heating after impregnation in superheated steam at 250 degrees Celsius (see Example 1).

Regarding claim 36, Iwakura '020 discloses that the oxidation may take place in the presence of air, which contains both hydrogen and oxygen (see column 9, lines 39-41) to produce propylene oxide (abstract).

3. Claims 1, 4-5, 18, 22-23, 26-28, 30-33, and 35-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Rajaram et al. US 5,480,854.

Regarding claims 1, 33, and 35 Rajaram '854 discloses a process for making a catalyst comprising co-precipitation (for lower temperature use) or impregnating (for higher temperature use) metal oxide particles with noble metal precursor, wherein the noble metal may be Au (see abstract and column 2, lines 45-56) and the metal oxide particles may comprise titania (see column 3, lines 14-16), with any reducing agent such as formaldehyde or sodium formate (see column 6, lines 43-44).

Regarding claims 4-5, Rajaram '854 discloses formaldehyde or sodium formate (see column 6, lines 43-44).

Art Unit: 1754

Regarding claims 18, 22-23, and 27 Rajaram '854 discloses titania and ceria (see column 3, lines 14-16).

Regarding claim 26, Rajaram '854 discloses washing (see Examples).

Regarding claim 28, Rajaram '854 discloses incipient wetness impregnation technique (see Example 2).

Regarding claims 30-32, Rajaram '854 discloses calcination after impregnation at 500 degrees Celsius (see Examples).

4. Claims 1-7, 9, 18, 22-23, 25-29, and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Haruta et al. US 4,937,219.

Regarding claims 1, 33, and 35, Haruta '219 discloses a process for making a gold catalyst with a titania support (see abstract; column 4, lines 1-4; column 5, lines 53-56) wherein the support is impregnated with chloroauric acid and magnesium citrate (see Example 12), which is a reducing agent.

Regarding claims 2, 4-7, and 9, Haruta '219 discloses chloroauric acid and magnesium citrate solution (see Example 12).

Regarding claim 3, Haruta '219 discloses 9.7 g of chloroauric acid and all the gold deposited (see Example 12).

Regarding claim 18, Haruta '219 discloses titania support (see abstract; column 4, lines 1-4; column 5, lines 53-56).

Regarding claims 22-23 and 27-28 Haruta '219 discloses magnesium nitrate impregnation (see Example 12).

Regarding claim 25, Haruta '219 discloses aqueous solution (see Example 12).

Regarding claim 26, Haruta '219 discloses washing with water (see Example 12).

Regarding claim 29, Haruta '219 discloses 0-80 degrees Celsius (see column 5, lines 60-63).

Regarding claims 31-32 and 36, Haruta '219 discloses calcination at 80-800 degrees Celsius (see column 5, lines 32-35 and column 6, lines 30-35).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwakura '020.

Iwakura fails to disclose propylene oxide.

Art Unit: 1754

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to oxidize propylene oxide in the process of Iwakura because Iwakura discloses olefin oxides including ethylene oxide (see abstract), which would obviously, to one of ordinary skill, suggest similar olefin oxides having up to at least one more carbon atom including propylene oxide.

***Allowable Subject Matter***

5. Claims 10-17, 19, 21, and 38-46 are allowed.
6. Claims 8 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter: It would not have been obvious to one of ordinary skill in the art at the time the invention was made to use a reducing agent containing titanium in the process of the instant claims 10, 19, and 21; the loading percentage of the instant claim 20; nor the molar ratio in the process of the instant claim 8.

***Response to Arguments***

8. Applicant's arguments filed 7/6/04 have been fully considered but they are not persuasive.



Art Unit: 1754

It is argued that in contrast, Claim 1... in the presence of hydrogen. This is not persuasive for the reasons above and also because a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

It is argued that the Examiner argues that since hydrogen is present... hydro-oxidation catalyst. This is also not persuasive for the reasons above and also because Applicant appears to admit that hydrogen is present in air. No particular amount of hydrogen present, much less an amount greater than that present in air, is claimed, as Applicant appears to suggest. It is noted that the features upon which applicant relies (i.e., a particular amount of hydrogen, such as an amount "200 to 2000 times greater than in air") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not

Art Unit: 1754

read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

It is argued that further, the claimed "method of making"... over the prior art. This is not persuasive because Applicant uses open language "comprising", which does not limit the claim from further steps or features. And, in any case, Iwakura discloses gold on a titania wherein the process comprises impregnation of a titania carrier (see column 2, lines 37-39 and column 3, lines 37-41) with gold (see abstract and column 3, lines 12-13), wherein the aqueous impregnation solution may have alcohol or, specifically, ethanol added (see column 6, lines 39-43, Table 2, and Example 21), either of which Applicant defines as a preferred reducing agent (see instant specification, page 8).

It is argued that finally, the Office Action emphasizes... intended use limitation. This is not persuasive because Applicant appears to admit that hydro-oxidation is an intended use, arguing only that it is "clearly defined". And, in any case, Applicant appears to admit that hydrogen is present in air and no particular amount of hydrogen present is claimed.

It is argued that the Final Rejection errs by citing Rajaram... carbon dioxide. This is not persuasive because Applicant appears to admit that the prior art discloses

Art Unit: 1754

oxidation and, in any case, recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

It is argued that more to the point, Rajaram... incorporated therein. This is not persuasive because both impregnation and co-precipitation are disclosed (see rejection above and Rajaram '854). Since both methods are disclosed, a claim to either reads on the disclosure of the prior art.

It is argued that insofar as Rajaram et al. does not teach... over Rajaram et al. This is not persuasive because Rajaram discloses any reducing agent such as formaldehyde or sodium formate (see column 6, lines 43-44).

It is argued that pointing to Example 2 of Rajaram... of the prior art. This is not persuasive Applicant appears to admit that both impregnation and reducing agents are disclosed, arguing only that there is "no nexus", despite the fact that

Art Unit: 1754

both are disclosed in the same "single prior art reference" (see §102, above) by the same inventor for making the same product.

It is argued that furthermore, Rajaram et al. discloses noble metals... equivalent capacity. This is not persuasive because Applicant claims a process using open language "comprising" which does not exclude the possibility of other features. And, in any case, Applicant appears to admit that gold is disclosed, which disclosure the Examiner deems is sufficiently specific for anticipation under §102.

It is argued that the Examiner argues that... the claim is anticipated. This is not persuasive because Haruta discloses the support is impregnated with chloroauric acid and magnesium citrate (see Example 12), which is a reducing agent.

It is argued that a skilled artisan would recognize... not impregnation. This is not persuasive because Applicant does not claim a particular "volume of liquids", wherein "substantially all liquid" is absorbed, wherein a solution is not added to a second solution. It is noted that the features upon which applicant relies (i.e., a particular "volume of liquids", wherein "substantially all liquid" is absorbed, wherein a solution is not added to a second solution) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification

Art Unit: 1754

are not read into the claims. See *In re Van Geuns*, 988

F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

**Conclusion**

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-0987.

EMJ

October 18, 2004

A handwritten signature in black ink, consisting of stylized, cursive letters that appear to be 'EMJ' followed by a long horizontal flourish.